UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/512,056	10/21/2004	Norio Ito	0033-0959PUS1	8421

2292 7590 11/13/2009

BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER	
BROOME, SAID A	

ART UNIT	PAPER NUMBER
2628	

NOTIFICATION DATE	DELIVERY MODE
11/13/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/512,056	ITO ET AL.	
	Examiner	Art Unit	
	SAID BROOME	2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *7/20/09*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,5,8,10,11,14 and 22-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,5,8,10,11,14 and 22-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/14/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This office action is in response to an amendment filed on 7/20/2009.

2. Claims 1 and 10 have been amended by the applicant.

3. Claims 2, 4, 6, 7, 9, 12, 13 and 15-21 have been cancelled.

4. Claims 3, 5, 8, 11, 14 and 22-28 are original.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 5 recites 'said three-dimensional image data', however the three-dimensional image data has been defined within claims 1 an d3 as 'at least two three-dimensional image data', therefore the three-dimensional image data recited in claim 5, as well as dependent claim 8, should distinctly claim the three-dimensional image data as 'said at least two three-dimensional image data' to clearly define the applicant's invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3, 5, 8, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osaka et al. (hereinafter "Osaka", US Patent 6,023,277) in view of Akamatsu et al. (hereinafter "Akamatsu", US Patent 6,313,866).

Regarding claim 1, Osaka teaches a multimedia information generation apparatus for generating multimedia information including at least one two-dimensional image data or character information and at least two three-dimensional image data based on a plurality of viewpoints enabling stereoscopic vision, said multimedia information generation apparatus (col. 14 lines 16-24: "*FIG. 8 is...showing the configuration of a computer system...In this embodiment, a two-dimensional image and a three-dimensional (stereoscopic) image are switched between in...a display screen…*", col. 16 lines 11-15: "*…image file 50 according to this embodiment includes...three-dimensional image data 52 composed of combined stripes, and two-dimensional image data 53…*" and Fig. 44: *1036a, 1036b*), comprising:

a multimedia information generation unit generating said multimedia information constituted of said at least one two-dimensional image data or character information and said at least two three-dimensional image data, said control information, and header information necessary for reproducing data (col. 14 lines 47-53: "*The display driver 6 comprises elements 7, 8, 9 and 10...An image painting unit 7 controls the painting of data actually painted on the stereoscopic display, namely a two-dimensional image handled heretofore and a three-dimensional image…*" and lines 57-63: "*A screen controller 9 generates paint signals and distributes these signals to the image paint unit 7...A host computer 11 is capable of handling two-dimensional images and three-dimensional images.*", *where the display driver 6 comprises a*

paint unit 7 that generates the two and three dimensional images and also a screen controller that controls the display of the three dimensional images, col. 17 lines 41-47: "*…the screen controller 9 notifies the image painting unit 7 of the stereoscopic image data to be displayed, its display position and size…*"), and

said control information generation unit generating identification data for identifying said at least two three-dimensional image data and including said identification data in said three-dimensional image display control information, and only one said identification data being provided for said at least two three-dimensional image data (col. 16 lines 11-21: "*A three-dimensional image file 50 according to this embodiment includes a…image format…described in the file header. The application analyzes the header, reads in the image data and causes the computer to paint the image.*" and col. 17 lines 24-26: "*…it is determined, based upon the information in the file header 51, whether this window has three-dimensional image data.*", *where the information used to indicate the dimensions of the three-dimensional image data by using an identifier designating that the image is three-dimensional, therefore other formats, such as two-dimensional would be designated as well*);

However, Osaka fails to teach a control information generation unit capable of generating, based on an input parameter, three-dimensional image display control information necessary for converting said three-dimensional image data for enabling stereoscopic vision for a plurality of three-dimensional display schemes. Akamatsu teaches a control information generation unit capable of generating, based on an input parameter, three-dimensional image display control information necessary for converting said three-dimensional image data for enabling stereoscopic vision for a plurality of three-dimensional display schemes (col. 5 lines 6-

14: "*…the first image signal is fed to a parallax control circuit 106, and the second image signal to a depth information minimum value acquisition circuit 105 and also to a three-dimensional image synthesizer 103. The output terminal of the parallax control circuit 103 is connected to the three-dimensional image synthesizer 103. In this synthesizer, the depth information items of the input two image signals are compared with each other, whereby synthesization is performed such that the one of these signals which indicates a larger depth will be output.*", col. 5 lines 17-23: "*…the first image signal is fed to a first depth information limiter 201, and the second image signal to a second depth information limiter 202. The image signals limited by the depth information limiters 201 and 202 are fed to a three-dimensional image synthesizer 103.*" and *shown in Figs. 4, 5 and 7, in which control information generation units, such as parallax control circuit 106 and depth information limiter 201, enable three dimensional data to be provided for conversion into different stereoscopic display schemes, as illustrated in Figs. 4, 5 and 7*). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to modify the three-dimensional images of Osaka with the three-dimensional conversion display schemes of Akamatsu because this modification would provide an improved stereoscopic environment that enables adaptive display of three-dimensional data in a plurality of different display schemes, wherein stereoscopic images are presented with accurate visual continuity regardless of the particular required display scheme, so to accurately maintain the stereoscopic effect and reduce visual discontinuities during stereoscopic visualization.

Regarding claim 3, Osaka teaches wherein said identification data is provided for the whole of said at least two three-dimensional image data (col. 17 lines 41-47: "*…the screen controller 9 controls the image painting unit 7 and the checkered mask-pattern painting unit 8*

and causes a three-dimensional display to be presented at the position of the window of the stereoscopic display 12." and col. 17 lines 24-26: "*…it is determined, based upon the information in the file header 51, whether this window has three-dimensional image data.*").

Regarding claim 5, Osaka teaches an identifier for identifying each of at least said two-dimensional image data and said three-dimensional image data is set in advance (col. 16 lines 11-21: "*A three-dimensional image file 50 according to this embodiment includes a file header 51…image format…described in the file header. The application analyzes the header, reads in the image data and causes the computer to paint the image.*", *where the file header identifies that images prior to generation of the stereoscopic images*, col. 17 lines 24-26: "*…it is determined, based upon the information in the file header 51, whether this window has three-dimensional image data.*"), and said identification data includes the identifier of said three-dimensional image data (col. 38 lines 5-11: "*…it is determined, based upon the information in the file header 51, whether this window has three-dimensional image data.*", *where the information used to control the display of the three-dimensional image is based on the identifier designating that the image is three-dimensional*).

Regarding claim 8, Osaka teaches a predetermined value that indicates that all image data included in said multimedia information are three-dimensional image data are three-dimensional images (col. 16 lines 11-15: "*…image file 50 according to this embodiment includes…three-dimensional image data 52 composed of combined stripes…*" and col. 38 lines 5-11: "*…it is determined, based upon the information in the file header 51, whether this window has three-dimensional image data.*", *where the file header contains a pre-designated file extension that indicates whether the image is three-dimensional*).

Regarding claim 10, Osaka teaches a multimedia information reproduction apparatus (Fig. 12) for reproducing multimedia information generated by a multimedia information generation apparatus, said multimedia information generation apparatus generating said multimedia information constituted of at least one two-dimensional image data or character information and at least two three-dimensional image data, three-dimensional image display control information (col. 14 lines 16-24: "*...the configuration of a computer system...In this embodiment, a two-dimensional image and a three-dimensional (stereoscopic) image are switched between in...a display screen…*" *and is shown in* Fig. 12), and header information necessary for reproducing data (col. 16 lines 11-15: "*…image file 50 according to this embodiment includes...three-dimensional image data 52 composed of combined stripes, and two-dimensional image data 53…*"), said multimedia information reproduction apparatus comprising:

a generation unit that generates three-dimensional image data from a two-dimensional image data (col. 21 lines 51-53: "*The stereoscopic-image-data processing unit 306 combines a pair of left and right image data…*" and lines 58-61: "*The display control unit 303 receives stereoscopic-image data formed by the stereoscopic-image-data processing unit 306...and displays the received data…*"); and

three-dimensional image data generated by said generation unit and three-dimensional image data included in said multimedia information (col. 16 lines 11-15: "*…image file 50 according to this embodiment includes...three-dimensional image data 52 composed of combined stripes, and two-dimensional image data 53…*"). However, Osaka fails to teach said three-dimensional image display control information supporting a plurality of three-dimensional display schemes, a first synthesis unit that synthesizing said three-dimensional image data, and

data conversion unit converting said synthesized three-dimensional image data based on a three-dimensional display scheme selected form among said plurality of types of three-dimensional display schemes supported by the three-dimensional image display control information;

Akamatsu teaches said three-dimensional image display control information supporting a plurality of three-dimensional display schemes (col. 5 lines 17-23: "*…the first image signal is fed to a first depth information limiter 201…The image signals limited by the depth information limiters 201 and 202 are fed to a three-dimensional image synthesizer 103.*" and *shown in Figs. 5 and 7, in which control information generation units, such as the depth information limiters 201, enable three dimensional data to be provided for conversion into different stereoscopic display schemes, as illustrated in Figs. 5 and 7, through synthesize of the three-dimensional signal 1 with different second three-dimensional image signals, as shown in Fig. 5 and 7*), a first synthesis unit that synthesizing said three-dimensional image data (col. 5 lines 4-11: "*…a first image signal is input to an input terminal 11, while a second image signal is input to a second input terminal 12… The output terminal of the parallax control circuit 103 is connected to the three-dimensional image synthesizer 103.*", *where the synthesis unit synthesizes two input three-dimensional images, therefore one of ordinary skill in the art at the time of invention would have been capable of inputting the three-dimensional images generated by Osaka and synthesize the images*) and data conversion unit converting said synthesized three-dimensional image data based on a three-dimensional display scheme selected from among said plurality of types of three-dimensional display schemes supported by the three-dimensional image display control information (Fig. 5 and 7, *in which data conversion units 103 enables synthesis of input three-dimensional image data based on the type of supported three-dimensional display scheme chosen*

prior to the image data being passed to the conversion unit 103, as shown in Figs. 5 and 7). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to modify the three-dimensional images of Osaka with the three-dimensional image synthesis of Akamatsu because this modification would provide an improved stereoscopic environment that enables display of both three-dimensional and two-dimensional image simultaneously, wherein accurate images are presented with accurate visual continuity through the display to lessen any noticeable discontinuities that would have been potentially displayed.

Regarding claim 11, Osaka teaches a second synthesis unit that synthesizes a plurality of two-dimensional image data wherein said generation unit generates the three-dimensional image data from the two-dimensional image data synthesized by said second synthesis unit (col. 41 lines 40-44: "*…painting a synthesized image, obtained by alternately arraying at least two parallax images in the form of stripes, in the three-dimensional display zone…*", *in which a plurality of 2D images are subsequently synthesized to produce 3D image data*).

Claims 14 and 22-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osaka in view of Iizuka et al. (hereinafter "Iizuka", US Patent 6,657,655).

Regarding claim 14, Osaka teaches a multimedia information reproduction apparatus (Fig. 12) for reproducing multimedia information generated by the multimedia information generation apparatus (col. 16 lines 11-15: "*…image file 50 according to this embodiment includes…three-dimensional image data 52 composed of combined stripes, and two-dimensional image data 53…*") as recited in claim 1, said multimedia information reproduction apparatus comprising, comprising:

a 2D/3D conversion unit converting page image (Fig. 44: element 1033a) into a three-dimensional image (Fig. 45: element 1033a); and

three-dimensional image data included in said multimedia information (col. 16 lines 11-15: "*…image file 50 according to this embodiment includes…three-dimensional image data 52 composed of combined stripes, and two-dimensional image data 53…*");

However, Osaka fails to teach a page data decoding unit decoding graphic and character information included in said multimedia information to obtain a page image data. Iizuka teaches a page data decoding unit decoding graphic and character information included in said multimedia information to obtain a page image data (col. 21 lines 40-43: "*The image-file processing unit 304 reads various types of image files, analyzes the contents of the read file, decodes compressed data if necessary, and converts the data into image data having a predetermined standard format.*", *where the image data representing the two-dimensional left and right images is decoded, therefore it would have been obvious to one of ordinary skill in the art at the time of invention to decode any image data including 2D image page data presented in a 2D window, as shown by Osaka, Figs. 34 and 45*), therefore it would have been obvious to one of ordinary skill in the art at the time of invention to modify the three-dimensional images of Osaka with the page data of Iizuka because this modification would provide realistic two-dimensional window images represented in three dimensions stereoscopically where precise images are presented enabling accurate depth perception of any two-dimensional window or page data in a three-dimensional environment.

Regarding claim 22, Osaka teaches a second synthesis unit that synthesizes a plurality of two-dimensional image data, wherein said 2D/3D conversion unit converts the two-dimensional

image data synthesized by said second synthesis unit into three-dimensional image data (col. 41 lines 40-44: "*…painting a synthesized image, obtained by alternately arraying at least two parallax images in the form of stripes, in the three-dimensional display zone…*", *in which a plurality of 2D images are subsequently synthesized to produce 3D image data*).

Regarding claim 23, Osaka teaches a first font image, or three-dimensional image, and a second font image, or two-dimensionally displayed image, corresponding to character information are provided (col. 16 lines 11-15: "*…image file 50...includes...three-dimensional image data...and two-dimensional image data…*"), and said first font image is used when the character information is three-dimensionally displayed, and said second font image is used when the character information is two-dimensionally displayed. (col. 16 lines 11-15: "*…image file 50...includes...three-dimensional image data...and two-dimensional image data…*").

Regarding claim 24, Osaka fails to teach said page data decoding unit uses said first or second font image to obtain the page image data. Iizuka teaches said page data decoding unit uses said first or second font image to obtain the page image data (col. 21 lines 40-43: "*The image-file processing unit 304 reads various types of image files, analyzes the contents of the read file, decodes compressed data if necessary, and converts the data into image data having a predetermined standard format.*", *where the image data representing the two-dimensional left and right images is decoded, therefore Iizuka provides the capability to decode any image data including 2D image page data presented in a 2D window, as shown by Osaka, Figs. 34 and 45*), therefore it would have been obvious to one of ordinary skill in the art at the time of invention to modify the three-dimensional images of Osaka with the page data of Iizuka because this modification would provide realistic two-dimensional window images represented in three

dimensions stereoscopically where precise images are presented enabling accurate depth perception of any two-dimensional window or page data in a three-dimensional environment.

Regarding claim 25, Osaka illustrates said 2D/3D conversion unit (Fig. 44: *element 1033a*) uses said first or second font image to obtain the three-dimensional image data (Fig. 45: *element 1033a, therefore the system disclosed by Osaka, Fig. 28, contains one or more computer processing components that perform the equivalent functionality of a synthesis unit that synthesizes the 2D or 3D character data to obtain the three-dimensional, or stereoscopic image data, for display*).

Regarding claim 26, Osaka teaches a first font image, or three-dimensional image, storage and a second font image, or two-dimensionally displayed image, (col. 16 lines 11-15: "*…image file 50...includes...three-dimensional image data...and two-dimensional image data…*"); and a switch selecting said first or said second font image (col. 12 lines 6-8: "*…it is possible to switch between a two-dimensional display and a three-dimensional display…*").

Regarding claim 27, Osaka teaches converting the second font image, or two-dimensional image, into the first font image, or three-dimensional image (col. 13 lines 50-52: "*…a method of presenting a mixed display of a three-dimensional image and a two-dimensional image…*").

Regarding claim 28, Osaka teaches said first font image, or three-dimensional image, which was generated through synthesis of the two-dimensional images, is comprised of a plurality of pieces of light/dark information and arranged so that apparent charter thickness is thin (col. 27 lines 62-65: "*…the number of parallax images) reduces the aperture efficiency of the parallax barrier pattern, resulting in a darker observed image.*", Figs. 24A, 24B, 51A-51C

and 52A, *where the character thickness is presented thin so the pieces may be synthesized for stereoscopic viewing*).

Response to Arguments

Applicant's arguments with respect to claims 1, 3, 5, 8, 10 and 11 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments with regards to claims 14 and 22-28 filed 7/20/09 have been fully considered but they are not persuasive.

The Information Disclosure Statement submitted on June 14, 2006 has been acknowledged by the Examiner and the cited references have been considered.

The applicant argues in regards to claim 10 that in the embodiment shown in Fig. 27 of the present application, the three-dimensional image synthesis unit 55 performs synthesis of the three-dimensional image based on input arrangement information (specification at page 36, lines 26-27). For example, when arrangement information of the three dimensional image data is designated as (X,Y), the three-dimensional image synthesis unit may synthesize the image so that each of the right and left images are arranged at (X/2,Y) as shown in Fig. 29B (i.e., coordinate conversion). Furthermore, a data conversion unit 26 converts three-dimensional image data of the three-dimensional image synthesis unit to conform to a desired three-dimensional display form, in which Applicants submit that both Akamatsu and Osaka are directed to display devices that display according to a single three-dimensional display scheme. Osaka does not teach a module storing three-dimensional image data in one multimedia information file that has display control information for various three-dimensional display

schemes. However, the applicant's arguments are unpersuasive because in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "*...the embodiment shown in Fig. 27 of the present application, the three-dimensional image synthesis unit 55 performs synthesis of the three-dimensional image based on input arrangement information (specification at page 36, lines 26-27). For example, when arrangement information of the three dimensional image data is designated as (X,Y), the three-dimensional image synthesis unit may synthesize the image so that each of the right and left images are arranged at (X/2,Y) as shown in Fig. 29B (i.e., coordinate conversion)...a data conversion unit 26 converts three-dimensional image data of the three-dimensional image synthesis unit to conform to a desired three-dimensional display form.*") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

The applicant argues in regards to claim 10 that Akamatsu and Osaka, either alone or in combination, fail to disclose at least the claimed "data conversion unit converting said synthesized three-dimensional image data based on a three-dimensional display scheme selected from among said plurality of types of three-dimensional display schemes supported by the three-dimensional image display control information." However, the applicant arguments are unpersuasive because the 35 U.S.C. 103(a) rejection of claim 10 under new grounds of rejection provided in the above office action provides teaching of the data conversion unit converting said synthesized three-dimensional image data based on a three-dimensional display scheme selected from among said plurality of types of three-dimensional display schemes supported by the three-

dimensional image display control information, therefore the rejection of claim 10 has been maintained.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SAID BROOME whose telephone number is (571)272-2931. The examiner can normally be reached on M-F 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached on (571)272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Said Broome/
Examiner, Art Unit 2628